

Amendments to the Claims

1. (Amended) A method of producing diversity-encoded spread-spectrum signals for transmission into a wireless communication channel, comprising:
generating a spread information signal ~~at least one wideband signal~~,
generating a despreading signal, and
~~coupling an information signal onto the at least one wideband signal to produce at least one spread spectrum signal,~~
~~— duplicating the spread spectrum signal to generate a plurality of spread spectrum signals, and~~
diversity-encoding at least one of the spread information signal and the despreading signal ~~spread spectrum signals~~.
2. (Amended) The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein the despreading ~~wideband~~ signal is comprises a noise signal.
3. (Amended) The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein generating a spread information signal ~~the step of coupling an information signal~~ includes modulating ~~the~~ at least one of a plurality of identical ~~wideband signals~~ with ~~the~~ an information signal.
4. (Cancelled)
5. (Amended) The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 wherein ~~the step of~~ diversity encoding includes at least one item of a set of comprising providing a time offset, polarizing, applying a predetermined directionality, transmitting from a plurality of spatially separated transmitters, modulating with a predetermined carrier frequency, combining with a carrier having a predetermined mode, and transmitting ~~the spread spectrum~~ signals in at least one predetermined subspace channel.
6. (Amended) The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 further comprising a step of modulating the spread information signal ~~spread spectrum signals and the despreading signal~~ onto a carrier signal.

7. (Amended) The method of producing diversity-encoded spread-spectrum signals recited in Claim 1 further comprising a step of coupling the ~~spread-spectrum signals~~ spread information signal and the despreading signal into a communication channel.
8. (Amended) A method of producing diversity-encoded spread-spectrum signals for transmission into a wireless communication channel, comprising:
 - generating at least one information-bearing wideband signal,
 - generating at least one decoding signal, and
 - diversity-encoding at least one of the information-bearing wideband signal and the decoding signal.
9. (Original) The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 wherein the wideband signal includes a noise signal.
10. (Cancelled)
11. (Amended) The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 wherein the step of diversity encoding includes at least one item of a set including ~~of~~ providing a time offset, polarizing, applying a predetermined directionality, transmitting from a plurality of spatially separated transmitters, modulating with a predetermined carrier frequency, combining with a carrier having a predetermined mode, and transmitting the signals in at least one predetermined subspace channel.
12. (Original) The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 further comprising a step of modulating the information-bearing wideband signal and the decoding signal onto a carrier signal.
13. (Original) The method of producing diversity-encoded spread-spectrum signals recited in Claim 8 further comprising a step of coupling the information-bearing wideband signal and the decoding signal into a communication channel.
14. (Withdrawn) A method of extracting information signals from a plurality of received spread-spectrum signals comprising:
 - receiving the spread-spectrum signals, at least one of the spread-spectrum signals being a diversity-encoded spread-spectrum signal,
 - decoding at least one of the diversity-encoded signals, and

correlating the decoded signal with at least one of the spread-spectrum signals to produce a correlation signal that is indicative of information encoded in the spread-spectrum signals.

15. (Withdrawn) A method of extracting information signals from a plurality of received spread-spectrum signals comprising:

receiving the spread-spectrum signals and at least one spectrum-decoding signal, at least one of the spread-spectrum signals and the spectrum-decoding signal being a diversity-encoded signal,

decoding at least one of the diversity-encoded signals to provide at least one diversity-decoded signal, and

correlating the diversity-decoded signal with at least one of the spread-spectrum signals and the spectrum-decoding signal to produce a correlation signal that is indicative of information encoded in the spread-spectrum signals.

16. (Amended) A spread-spectrum transmitter ~~for transmitting spectrum-coded, diversity-coded signals, the transmitter~~ comprising:

a wideband-signal generator configured for generating at least one a plurality of wideband signals, at least one of the plurality wideband signals being designated as a despreading signal,

~~an information-signal generator for generating at least one information signal,~~

a modulator coupled to the wideband signal generator and ~~the information-signal generator~~ configured for combining modulating at least one information signal ~~with~~ onto at least one of the plurality of wideband signals for generating ~~a at least one~~ spread-spectrum signal, and

a diversity processor configured for duplicating the at least one spread-spectrum signal to provide a plurality of duplicate spread-spectrum signals and adjusting at least one diversity parameter of at least one of the duplicate spread-spectrum signals and the decoding signal to enable separation of the adjusted signal from the at least one unadjusted signal.

17. (Amended) A spread-spectrum transmitter ~~for transmitting spectrum-coded, diversity-coded signals, the transmitter~~ comprising:

a wideband-signal generator configured for generating ~~at least one~~ a plurality of wideband signals,

~~an information signal generator for generating at least one information signal,~~

a modulator coupled to the wideband signal generator configured for modulating ~~and the information signal generator for combining at least one information signal onto~~ with at least one of the plurality of wideband signals for generating ~~at least one~~ a spread-spectrum signal, and

a diversity processor configured for adjusting at least one diversity parameter of at least one of the spread-spectrum signal and at least one of the plurality of wideband signals ~~the wideband signal to enable separation of the adjusted signal from the at least one unadjusted signals.~~

18. (Withdrawn) A spread-spectrum receiver for extracting an information signal from a plurality of spectrum-coded, diversity-coded signals, the receiver comprising:

a receiving system for receiving the spectrum-coded, diversity-coded signals,

a diversity processor coupled to the receiving system for diversity decoding at least one of the received signals to provide a plurality of signals that are highly correlated, and

a signal combiner coupled to the diversity processor for correlating or otherwise combining the plurality of highly correlated signals to generate a correlation signal indicative of the information signal.

19. (Withdrawn) A spread-spectrum receiver for extracting an information signal

from at least one spectrum-coded, diversity-coded signal, the receiver comprising:

a receiving system for receiving the at least one spectrum-coded, diversity-coded signal and receiving at least one despread signal, the received despread signal being separable from the at least one spectrum-coded signal,

a diversity processor coupled to the receiving system for diversity decoding at least one of the received signals to generate a plurality of signals that are highly correlated, and

a signal combiner coupled to the diversity processor for correlating or otherwise combining the plurality of highly correlated signals to generate a correlation signal indicative of the information signal.